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Terry M. Nelson

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HEWLETT PACKARD COMPANY
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INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

KAU, STEVEN Y

ART UNIT

PAPER NUMBER

2625

NOTIFICATION DATE

DELIVERY MODE

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/660,323

Applicant(s)

NELSON, TERRY M.

Examiner

Steven Kau

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :1/10/08, 5/12/06, 3/21/05, 2/28/05, 4/27/04.

DETAILED ACTION

Preliminary Amendment

1. This Office Action acknowledges the preliminary amendment filed on September 10, 2003.

- Claims 5, 9, 10 and 28 have been amended.
- Claims 1-32 are currently pending.

Specification

2. The disclosure is objected to because of the following informalities: Paragraph 0005 of the disclosure discloses "pattern 12" and "sheet 12". Applicant failed to particularly point out whether number 12 is a "pattern" or a "sheet". In addition, Paragraph 0055 of the disclosure, recites, "...but are each but are located.." (emphasis added), which does not provide clear meaning.

Appropriate correction is required.

Drawings

3. The drawings are objected to because Fig. 1A does not contain "dots 14" (see Paragraph 0005 of the disclosure) and Fig. 1B is not labeled as "Prior Art". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an

amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding Claim 28, recites, "a computer program or a primer driver comprising program code means for performing the method steps of claim 21 when the program is run on a computer and/or other processing means associated with suitable apparatus" (emphasis added). Applicant failed to particularly point out what he is claiming for his invention. A person of ordinary skill in the art understands that a printer driver can be coded with a computer program specifically for configuring and

directing print jobs to a printer. However, the term of a computer program per se, may not necessary be a printer driver. In addition, applicant invokes 112 6th in Claim 28. However, applicant's disclosure does not provide any detail structural information for the means-plus function. Without defining the structure for means-plus functions, one skilled in the art would not be able to understand what structure will perform for the recited function. Therefore any means that perform the equivalent functionality will be reasonable utilized by one of ordinary skill in the art. See MPEP Section 2181.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claim 32 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 32 is drawn to "a location pattern", arranged for use with a system. "a location pattern", or "a pattern", is a printed matter, though seemingly a "manufacture," is rejected as not being within the statutory classes. See MPEP 706.03(a).

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claim 30 is rejected under 35 U.S.C. 102(a) as being anticipated by Wiebe et al (Wiebe) (US 2002/0159089).

Regarding claim 30.

Wiebe discloses a printer system (Figs. 1, 4, & 5) adapted to print a location pattern comprising a plurality of dots each offset from a nominal position in one of a plurality of directions (dots above, below, to the left and to the right of the corresponding raster position, Fig. 3), the system being arranged to modify the degree of offset of each dot from its nominal position by modifying the shape of each dot (Fig. 5, Paras 0053 & 0057, "calculates mathematically the appearance of the pattern based on the boundary information", a person of ordinary skill in the art understands that modifying the degree of offset of each dot from its nominal position can be done by calculating the appearance of the pattern based on the boundary information).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 2, 4, 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiebe et al (Wiebe) (US 2002/0159089) in view of Wang (US 5,469,267).

Regarding claim 1.

Wiebe discloses a printer system (Fig. 1) comprising a printer adapted to print a location pattern comprising a plurality of dots (Figs. 1, 2 and 3), each having a substantially predetermined size (Wiebe discloses Fig. 6 to illustrate a problem that "a printer unit cannot generate a dot of any size". A person of ordinary skill in the art understands the problem and to predetermine dot size which are adapted to the printer. Para 0060) and nominal position in the pattern (Figs 2 & 3, Para 0050), the printer having a resolution constraining the position at which the dots may be printed (Wiebe discloses a Boundary Module 504 of Fig. 5 to information regarding resolution and density and coupled with a Algorithm Module 508 of Fig.5 for printer to have constraining the position at which the dots can be printed. Para. 0053).

Wiebe differs from Claim 1. Wiebe does not expressly teach modifying at least some of the dots prior to printing such that the optical centre of gravity of the modified dots more closely coincides with their nominal positions.

Wang teaches modifying (correcting) at least some of the dots prior to printing such that the optical centre of gravity of the modified dots more closely coincides with their nominal positions (e.g. intersection of grid lines) (Fig. 3, col 5, lines 20 through col 6, line 25 and col 9, lines 19-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include modifying at least some of the dots prior to printing such that the optical centre of gravity of the modified dots more closely coincides with their nominal positions taught by Wang to position and orientating dot patterns with respect to intersection of two orthogonal grid lines (col 4, lines 15-27).

Regarding claim 2.

Wiebe discloses arranged to modify some of the dots prior to printing by changing shape of those dots from a nominal shape (Paras 0016-0017 & Paras 0020-0026. "For a printout where a position-coding pattern's scale is adjusted in relation to an ideal pattern, the printer unit is preferably arranged also to adjust the scale of the printed-out information", a person of ordinary skill in the art understands that in order to print out an ideal pattern, dots must be adjusted from a nominal shape).

Regarding claim 4.

Wiebe discloses the modification substantially does not alter the size of the dots (Para 0062 and 0063).

Regarding claim 6.

Wiebe discloses wherein the nominal position of each dot of the pattern lies offset in one of a plurality of directions, such as above, below, to the left and to the right, from the intersection point of a virtual grid (Para 0050).

Regarding claim 14.

Wiebe discloses wherein the printer is a digital printer (Fig. 1, Para. 0047).

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiebe et al (Wiebe) (US 2002/0159089) in view of Wang (US 5,469,267) as applied to claim 1, and further in view of Teremy et al (Teremy) (US 5,634,156).

Regarding claim 3.

Wiebe does not expressly teach that arranged to modify some of the dots prior to printing by introducing an asymmetry into the shape of those dots.

Teremy teaches that arranged to modify some of the dots prior to printing by introducing an asymmetry into the shape of those dots (col 6, lines 38 through col 7, line 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include that arranged to modify some of the dots prior to printing by introducing an asymmetry into the shape of those dots taught by Teremy to determine the orientation of the pattern (col 6, lines 3-19).

13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiebe et al (Wiebe) (US 2002/0159089) in view of Wang (US 5,469,267) and further in view of Teremy et al (Teremy) (US 5,634,156) as applied to claim 3 above, and further in view of Iwata et al (Iwata) (US 4,955,736).

Regarding claim 5.

Wiebe differs from claim 5, in that he does not expressly teach wherein the modified dot shape is substantially an "L" shape or substantially a "T" shape.

Iwata teaches wherein the modified dot shape is substantially an "L" shape or substantially a "T" shape (Figs. 5A-F & 6A-F, col 6, lines 9-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include that the modified dot shape is substantially an "L" shape or substantially a "T" shape taught by Iwata to prevent the thin or broken printed portion from occurring in printing (col 3, lines 16-20).

14. Claims 7, 8, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiebe et al (Wiebe) (US 2002/0159089) in view of Wang (US 5,469,267) as applied to claim 6 above, and further in view of Amato (US 5,175,694).

Regarding claim 7.

Wiebe does not expressly teach wherein the modification of the dots has the effect of moving the optical centre of gravity of those dots in a first direction, towards or away from their nominal positions.

Amato teaches wherein the modification of the dots has the effect of moving the optical centre of gravity of those dots in a first direction (X-direction), towards or away from their nominal positions (Fig. 3, col 2, lines 46 through col 3, line 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include the modification of the dots has the effect of moving the optical centre of gravity of those dots in a first direction, towards or away from their nominal positions taught by Amato for target tracking purpose (col 1, lines 52-53).

Regarding claim 8.

Wiebe does not expressly teach wherein the modification of the dots has the additional effect of moving the optical centre of gravity of those dots in a second direction, perpendicular to the first direction.

Amato teaches wherein the modification of the dots has the additional effect of moving the optical centre of gravity of those dots in a second direction (Y-Direction), perpendicular to the first direction (Fig. 3, col 2, lines 46 through col 3, line 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include the modification of the dots has the additional effect of moving the optical centre of gravity of those dots in a second direction, perpendicular to the first direction taught by Amato for target tracking purpose (col 1, lines 52-53).

Regarding claim 9.

Wiebe discloses wherein dots offset from intersection points of a virtual grid in a first direction have a different shape and/or size compared to dots offset from intersection points of a virtual grid in a second direction (Para. 0061).

Regarding claim 10.

Wiebe discloses wherein dots offset from intersection points of a virtual grid in a first direction have a different shape and/or size compared to dots offset from intersection points of a virtual grid in a second direction (Para 0048).

15. Claims 11, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiebe et al (Wiebe) (US 2002/0159089) in view of Wang (US 5,469,267) and further in view of Amato (US 5,175,694) as applied to claim 10 above, and further in view of Yosefi (US 6,509,903).

Regarding claim 11.

Wiebe does not expressly teach wherein dots offset in the first direction are rotations of dots offset in the second direction.

Yosefi teaches wherein dots offset in the first direction are rotations of dots offset in the second direction (col 3, lines 66 through col 4, line 50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include wherein dots offset in the first direction are rotations of dots offset in the second direction taught by Yosefi to prevent jagged edges in printing (col 4, lines 10-15).

Regarding claim 12.

Wiebe does not expressly teach wherein dots offset in the first direction are reflections of dots offset in the second direction.

Wang teaches wherein dots offset in the first direction are reflections of dots offset in the second direction (Fig. 7, col 5, lines 41-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include dots offset in the first direction are reflections of dots offset in the second direction taught by Wang to simplify independent parameter calculations (col 6, lines 5-16).

Regarding claim 13.

Wiebe does not expressly teach wherein dots offset in the first direction are combined rotations and reflections of dots offset in the second direction.

Yosefi teaches wherein dots offset in the first direction are rotations of dots offset in the second direction (col 3, lines 66 through col 4, line 50); and

Wang teaches wherein dots offset in the first direction are reflections of dots offset in the second direction (Fig. 7, col 5, lines 41-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to first include wherein dots offset in the first direction are rotations of dots offset in the second direction taught by Yosefi to prevent jagged edges in printing (col 4, lines 10-15, Yosefi), and then to have modified Wiebe to include wherein dots offset in the first direction are reflections of dots offset in the second direction taught by Wang to simplify independent parameter calculations (col 6, lines 5-16, Wang).

16. Claims 15, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiebe et al (Wiebe) (US 2002/0159089) in view of Wang (US 5,469,267) as applied to claim 14 above, and further in view of Rhoads et al (Rhoads) (US 7,054,463).

Regarding claim 15.

Wiebe does not expressly teach wherein the printer also functions as a photocopier.

Rhoads teaches wherein the printer also functions as a photocopier (col 4, lines 8-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include the printer also functions as a photocopier taught by Rhoads to provide detecting and examining feature in the banking industry (col 4, lines 8-21).

Regarding claim 16.

Wiebe does not expressly teach wherein the printer is an inkjet printer, a LED printer, a LCD printers, or a liquid electrophotographic printers.

Rhoads teaches wherein the printer is an inkjet printer, a LED printer, a LCD printers, or a liquid electrophotographic printers (col 2, line 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include wherein the printer is an inkjet printer, a LED printer, a LCD printers, or a liquid electrophotographic printers taught by Rhoads because of the low printer cost (col 2, lines 1-2).

Regarding claim 17.

Wiebe does not expressly teach wherein the printer has a resolution approximately between 600 and 1200 dpi.

Rhoads teaches wherein the printer has a resolution approximately between 600 and 1200 dpi (col 2, lines 1-4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include wherein the printer has a

resolution approximately between 600 and 1200 dpi taught by Rhoads because of the low printer cost (col 2, lines 1-2).

17. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiebe et al (Wiebe) (US 2002/0159089) in view of Wang (US 5,469,267) as applied to claim 1 above, and further in view of Murl (US 6,379,779).

Regarding claim 18.

Wiebe does not expressly teach wherein the dots are printed in IR absorbing ink.

Murl teaches wherein the dots are printed in IR absorbing ink (col 1, lines 40-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include wherein the dots are printed in IR absorbing ink taught by Murl to provide security for document reproduction (col 1, lines 40-53).

Regarding claim 19.

Wiebe does not expressly teach that adapted to print the location pattern without human-discernible content.

Murl teaches that adapted to print the location pattern without human-discernible content (col 1, lines 40-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include that adapted to print the location pattern without human-discernible content taught by Murl to provide security for document reproduction (col 1, lines 40-53).

18. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiebe et al (Wiebe) (US 2002/0159089) in view of Wang (US 5,469,267) as applied to claim 1 above, and further in view of Soules et al (Soules) (US 5,522,623).

Regarding claim 20.

Wiebe does not expressly teach that adapted to print the location pattern and human-discernible content on the same carrier.

Soules teaches that adapted to print the location pattern and human-discernible content on the same carrier (Fig. 1, col 7, lines 13-23 & col 7, lines 49-60, col 8, lines 49 through col 9, line 20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include that adapted to print the location pattern and human-discernible content on the same carrier taught by Soules to provide convenience and secure playing card or ID card for use (col 5, lines 66 through col 7, line 3).

19. Claims 21, 22 and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fahraeus et al (Fahraeus) (US 2002/0048404) in view of Teremy et al (Teremy) (US 5,634,156) as applied to claim 14 above, and further in view of Wang (US 5,469,267).

Regarding claim 21.

Fahraeus discloses a method of generating a location pattern comprising a plurality of dots (Figs. 1-3), comprising the steps of: determining the nominal position of the dots in a pattern area (Fig. 2, Para. 0033).

Fahraeus differs from claim 21, in that he does not expressly teach that assigning an asymmetrical shape to at least some of the dots in the pattern area, in dependence upon the characteristics of given printer, such that when printed, the optical centre of gravity of those dots substantially coincides with the corresponding nominal positions.

Teremy teaches that assigning an asymmetrical shape to at least some of the dots in the pattern area, in dependence upon the characteristics of given printer (col 6, lines 38 through col 7, line 12); and

Wang teaches that when printed, the optical centre of gravity of those dots substantially coincides with the corresponding nominal positions (Figs. 2 & 3, col 5, lines 1 through col 6, line 25 and col 9, lines 19-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Fahraeus to include assigning an asymmetrical shape to at least some of the dots in the pattern area, in dependence upon the characteristics of given printer taught by Teremy to determine the orientation of the pattern (col 6, lines 3-19, Teremy), and then to have modified Fahraeus to include when printed, the optical centre of gravity of those dots substantially coincides with the corresponding nominal positions taught by Wang to position and orientating dot patterns with respect to intersection of two orthogonal grid lines (col 4, lines 15-27, Wang).

Regarding claim 22.

Fahraeus discloses the step of requesting pattern information (e.g. reference measurement) from a pattern database (e.g. predetermined pattern) (Para 0010).

Regarding claim 24.

Fahraeus does not expressly teach the step of generating a print file of the pattern area, comprising at least some dots having the assigned asymmetrical shape.

Wiebe teaches the step of generating a print file of the pattern area (Paras 0009 and 0030); and

Teremy teaches at least some dots having the assigned asymmetrical shape (col 6, lines 38 through col 7, line 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Fahraeus to include the step of generating a print file of the pattern area taught by Wiebe because characteristics of printer devices can be varied in printing out graphical images (Para 0030, Wang), and then to have modified Fahraeus to include at least some dots having the assigned asymmetrical shape taught by Teremy to determine the orientation of the pattern (col 6, lines 3-19, Teremy).

Regarding claims 25, 26 and 27.

Fahraeus does not expressly teach the step of printing the print file on the given printer, and the step of explicitly defining the shape of the at least some of the dots in the native resolution of the printer, wherein the shape of the at least some of the dots is defined using any one of a bit map, a font set, or a high level programming language.

Wiebe teaches the step of printing the print file on the given printer (Para 0030), and the step of explicitly defining the shape of the at least some of the dots in the native resolution of the printer (Para 0016), wherein the shape of the at least some of the dots is defined using any one of a bit map, a font set, or a high level programming language (Para 0012 & 0030).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Fahraeus to include the step of printing the print file on the given printer and the step of explicitly defining the shape of the at least some of the dots in the native resolution of the printer, wherein the shape of the at least some of the dots is defined using any one of a bit map, a font set, or a high level programming language taught by Wiebe because characteristics of printer devices can be varied in printing out graphical images (Para 0030).

Regarding claim 28.

Fahraeus does not expressly teach a computer program or a printer driver comprising program code means for performing the method steps of claim 21 when the program is run on a computer and/or other processing means associated with suitable apparatus.

Wiebe teaches a computer program (e.g. boundary information, Para 0013) or a printer driver comprising program code means for performing the method steps of claim 21 when the program is run on a computer and/or other processing means associated with suitable apparatus (Para 0013 and 0030).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Fahraeus to include when the program is run on a computer and/or other processing means associated with suitable apparatus taught by Wiebe because characteristics of printer devices can be varied in printing out graphical images (Para 0030).

Regarding claim 29.

Claim 29 recites identical features as claim 21, except claim 29 is a system claim. Thus, arguments similar to that presented above for claim 21 are also equally applicable to claim 29.

20. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fahraeus et al (Fahraeus) (US 2002/0048404) in view of Teremy et al (Teremy) (US 5,634,156) as applied to claim 21 above, and further in view of Wang (US 5,469,267) and further in view of Wiebe et al (Wiebe) (US 2002/0159089).

Regarding claim 23.

Fahraeus does not expressly teach determining characteristics of the printer; and, determining whether or not the assigning step is required.

Wiebe teaches determining characteristics of the printer; and, determining whether or not the assigning step is required (Para 0030).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Fahraeus to include determining characteristics of the printer; and, determining whether or not the assigning step is required taught by

Wiebe because characteristics of printer devices can be varied in printing out graphical images (Para 0030).

21. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiebe et al (Wiebe) (US 2002/0159089) in view of Wang (US 5,469,267) as applied to claim 1, and further in view of Teremy et al (Teremy) (US 5,634,156).

Regarding claim 31.

Wiebe discloses a printer system (Figs 1, 4 & 5) adapted to print a location pattern comprising a plurality of dots (Fig. 3), the dots having a first dimension lying between predetermined limits (Fig. 3, Para 0050).

Wiebe differs from claim 31, in that he does not expressly teach that each dot having an optical centre of gravity located at a predetermined nominal positions in the pattern, the system being adapted to modify the pattern prior to printing by introducing an asymmetry to the dot shape of selected dots, substantially without causing the first dimension to exceed its predetermined limits, such that when printed on a pre-selected printer the optical centre of gravity of the selected dots more closely coincides with their corresponding nominal positions.

Wang teaches that each dot having an optical centre of gravity located at a predetermined nominal positions in the pattern (e.g. intersection of grid lines) (Fig. 3, col 5, lines 20 through col 6, line 25 and col 9, lines 19-47); and

Teremy teaches that the system being adapted to modify the pattern prior to printing by introducing an asymmetry to the dot shape of selected dots, substantially

without causing the first dimension to exceed its predetermined limits, such that when printed on a pre-selected printer the optical centre of gravity of the selected dots more closely coincides with their corresponding nominal positions (col 6, lines 3 through col 7, line 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Wiebe to include each dot having an optical centre of gravity located at a predetermined nominal positions in the pattern taught by Wang to position and orientating dot patterns with respect to intersection of two orthogonal grid lines (col 4, lines 15-27, Wang), and have modified Wiebe to include that the system being adapted to modify the pattern prior to printing by introducing an asymmetry to the dot shape of selected dots, substantially without causing the first dimension to exceed its predetermined limits, such that when printed on a pre-selected printer the optical centre of gravity of the selected dots more closely coincides with their corresponding nominal positions taught by Teremy to determine the orientation of the pattern (col 6, lines 3-19).

Regarding claim 32.

Claim 32 recites identical features as claim 31, except claim 32 is a location pattern claim. Thus, arguments similar to that presented above for claim 31 are also equally applicable to claim 32.

Conclusion

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Kau whose telephone number is 571-270-1120 and fax number is 571-270-2120. The examiner can normally be reached on M-F, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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